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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/732,978	12/11/2003	Eko N. Onggosanusi	TI-36617	8537

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EXAMINER

MILORD, MARCEAU

ART UNIT	PAPER NUMBER
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2618

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/06/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/732,978

Applicant(s)

ONGGOSANUSI ET AL.

Examiner

Marceau Milord

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 December 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) 1-32 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) 23-32 is/are allowed.
- 6) ☒ Claim(s) 1-4 is/are rejected.
- 7) ☒ Claim(s) 5-22 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-4, are rejected under 35 U.S.C. 103(a) as being unpatentable over Holtzman et al (US Patent No 640476 B1) in view of Lindoff (US Patent No 6628706 B1).

Regarding claims 1-4, Holtzman et al discloses a method for extracting information (figs. 4-5) transmitted by a desired user in a communications system from a received signal in the presence of interferers comprising: derotating the received signal (col. 3, lines 11-28; col. 7, lines 31-58); extracting information transmitted by the desired user from the received signal (col. 7, lines 42-60; col. 8, line 33-64; col. 9, lines 15-46).

However, Holtzman et al does not specifically disclose the steps of determining channel estimates and detecting the presence of interferers; computing contribution of the transmitted symbols from the user; sampling the received signal at a given sampling rate; wherein the received signal is transmitted at a symbol rate, and wherein the sampling rate is essentially equal

to the symbol rate; wherein the received signal is transmitted at a symbol rate, and wherein the sampling rate is higher than the symbol rate.

Lindoff, on the other hand, discloses a channel estimation that is performed for a received signal, wherein different parts of the received signals are modulated using different modulation types. The channel is first estimated based on part of a received signal modulated with a first modulation type. This channel estimate is then transformed into a channel estimate corresponding to at least a second modulation type (col. 2, lines 4-10; col. 3, lines 1-45). Furthermore, the channel estimate for the second modulation type is then input to an Equalizer together with the derotated information sequence. In addition, the training sequence, modulated with a first modulation type is derotated; synchronization is established by determining the starting position of the training sequence in the received burst (col. 3, lines 9-45). The channel estimation is performed using the start position and the derotated training sequence; as well as a known training sequence of the communication system; the channel estimate for the first modulation type is transformed into a channel estimate for the second modulation type; a second portion of the received signal, the information sequence, modulated with the second modulation type, is derotated. Finally, the derotated information sequence is demodulated in an equalizer using the transformed channel estimate. The output of the equalizer represents the decided symbol of the second modulation type (col. 4, lines 25-65). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the technique of Lindoff to the communication system of Holtzman in order to provide an accurate channel estimate for a received signal when different parts of the received signal are modulated by more than one modulation type.

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Allowable Subject Matter

3. Claims 23-32 are allowed.

Allowable Subject Matter

4. Claims 5-22, are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Marceau Milord whose telephone number is 571-272-7853. The examiner can normally be reached on Monday-Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew D. Anderson can be reached on 571-272-4177. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.


Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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MARCEAU MILORD


MARCEAU MILORD
PRIMARY EXAMINER

Marceau Milord

Primary Examiner

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